Persistent Mixed-Valence (TTF)(2) (+.) Dyad of a Chiral Bis(binaphthol)-tetrathiafulvalene (TTF) Derivative

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Auteur	Saad, Ali [1], Barrière, Frédéric [2], Levillain, Eric [3], Vanthuyne, Nicolas [4], Jeannin, Olivier [5], Fourmigué, Marc [6]
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Résumé en anglais	Mixed-valence dyadic [(TTF)(2)](+.) (TTF=tetrathiafulvalene) species the elementary building blocks of organic conductors-are usually too weakly associated to be observed in solution, unless covalently bound in dimers or physically constrained into a cage structure. We demonstrate here that a novel chiral tetrathiafulvalene functionalised with two 1,1'-binaphthol units (1) is able to associate in solution into persistent mixed-valence [(TTF)(2)](+.) dyadic moieties through a stereospecific recognition pattern. This redox active molecule exhibits different electrochemical and spectroscopic responses, as enantiopure RR, SS or meso isomers, a rare example of a chiral system in which different diastereoisomers do not exhibit the same electrochemical features, with a selective formation of the mixed-valence species in the enantiopure (RR)-1 or (SS)-1 isomers only, whereas the meso form does not show this association ability. A rationale for the selective self-association of the RR and SS enantiomers upon oxidation is provided, based on the different molecular geometries and accessibility of the TTF core toward the formation of the mixed-valence species.
URL de la notice	http://okina.univ-angers.fr/publications/ua2692 [7]
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